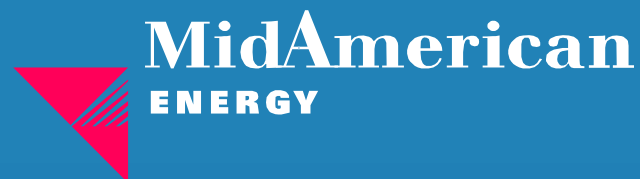
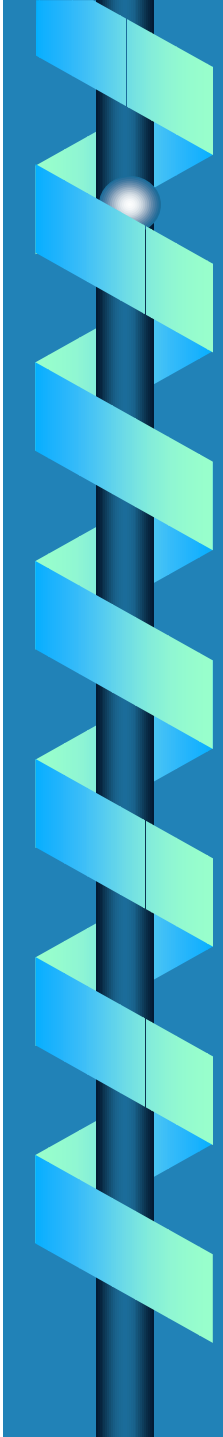


Renewable Energy Requirements and Net Billing - - Lessons Learned from Iowa



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This White Paper has been prepared by Brent E. Gale, Vice President-Legislation & Regulation of MidAmerican Energy Company. The document reflects his opinions and conclusions and not necessarily those of MidAmerican Energy Holdings Company or MidAmerican Energy Company.



Net Billing Defined

“Net billing means that an eligible end-use consumer pays an electric service provider only for the difference in an applicable billing period between the kWh supplied to the consumer by that provider and the kWh delivered to the delivery system by the consumer from a qualifying energy facility.”



Net Billing involves 2 distinct transactions:

- A retail sale by the electric service provider to the consumer at a retail rate or price.
- A sale for resale from the consumer to the electric service provider at the same rate or price for the excess kWh generated by the consumer.



The consumer is billed for the net. Hence, the correct characterization is net billing, not net metering.

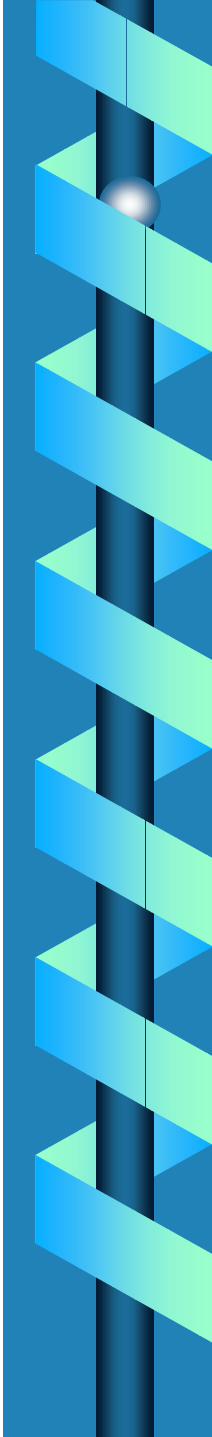


Net Billing may involve a third transaction:

- (3) If, after some pre-determined period, the consumer has delivered more kWh to the delivery system than the electric supplier has delivered to the consumer (i.e., negative meter registration), the electric supplier may be required to pay the consumer, typically at “avoided cost.”

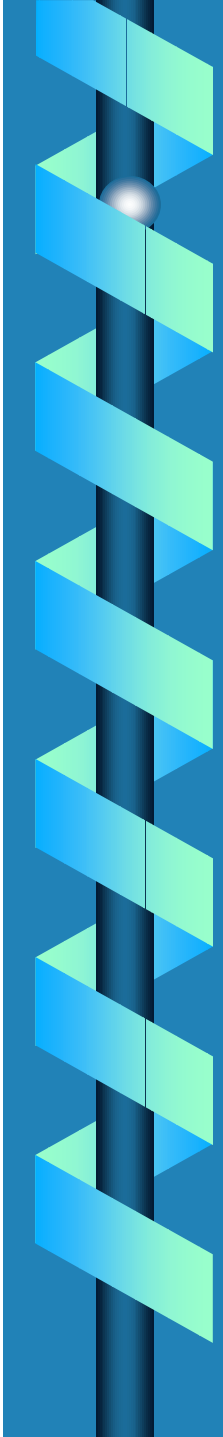


Legal Issues



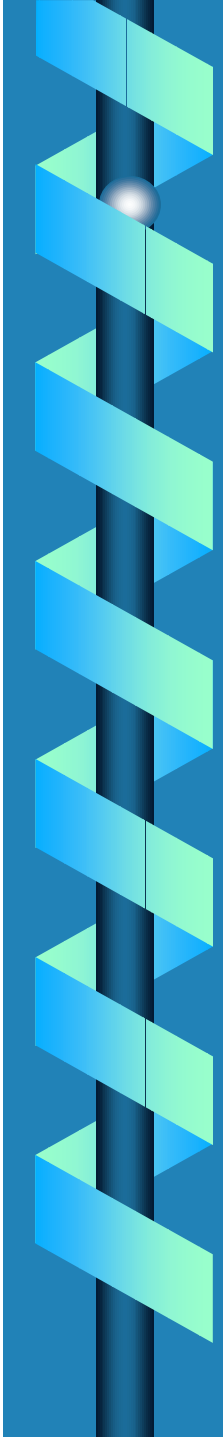
Iowa Renewable Energy Mandate:

15 years of litigation/how to discourage utilities from purchasing renewables



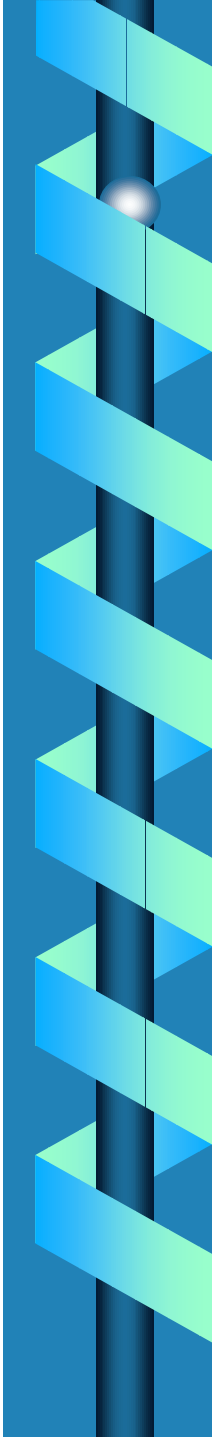
State requirements are pre-empted by PURPA to the extent they obligate a utility to purchase Q.F. power at rates in excess of avoided cost.

Midwest Power Systems, Inc., 78 FERC (CCH) ¶61,067 (1997)



State requirements are also inconsistent with FPA Section 205 to the extent they set rates for sales for resale in interstate commerce.

Midwest Power Systems, Inc., 78 FERC (CCH) ¶61,607 (1997)



This court concludes that net billing arrangements reflect discrete purchases and sales of electricity. The state cannot do indirectly what it cannot do directly under federal law. Net billing is pre-empted.

MidAmerican Energy Co. vs. Iowa U.B.,
Polk County District Court AA3173 (Iowa
1999), appeal pending.



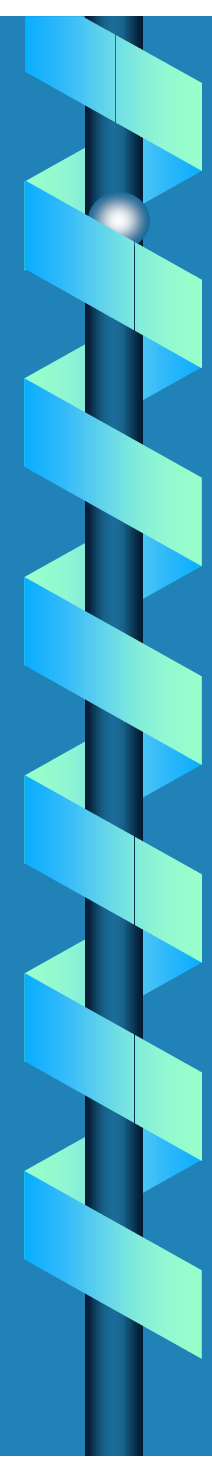
Practical Issues



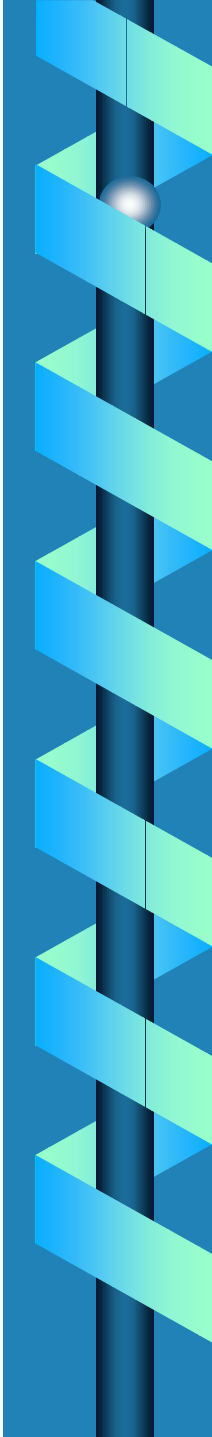
Net billing is not a prerequisite to the viability of distributed generation.



Net billing is a subsidy; a wealth transfer.



Net billing in a regulated bundled market
increases “lost and unaccounted for”
costs.



Net billing in an unbundled market causes the competitive service provider to lose the entire value of each discrete transaction.



TRANSACTION COST EXAMPLE

- Hour 0 - Electric service provider (ESP) buys, for resale, generation services at 3.5¢/kWh, delivery services at 2.5¢/kWh, and retail services (billing, etc.) at 1.0¢/kWh, for a total out-of-pocket expense of 7¢/kWh.



TRANSACTION COST EXAMPLE (cont.)

- Hour 1 - ESP sells to net billing consumer (NBC) one kWh for 8¢/kWh. NBC generates zero kWh during that hour. Meter registers 1 kWh. NBC owes ESP 8¢.

TRANSACTION COST EXAMPLE (cont.)

- Hour 2 – NBC generates 2 kWh, consuming 1 kWh and delivering 1 kWh to the delivery system. Meter “registers” zero. NBC owes ESP nothing for Hour 1 or Hour 2. ESP’s unrecovered out-of-pocket cost is at least 7¢ and foregone profit is 1¢.



TRANSACTION COST EXAMPLE (cont.)

- ESP's out-of-pocket losses are probably more since the energy delivered by NBC is random and non-dispatchable. ESP probably purchased generation and other services for resale assuming that it would sell to NBC in Hour 2.



TRANSACTION COST EXAMPLE (cont.)

- In addition, ESP is out of balance and theoretically subject to imbalance penalties.
- And, if NBC has negative meter registration at the end of the pre-determined period, ESP could actually have to pay for the random, non-dispatchable energy.



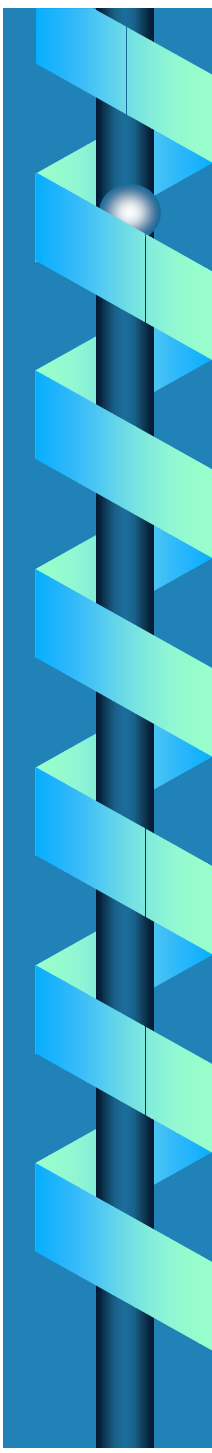
Net billing mandates in restructuring laws
will be viewed negatively by competitive
service providers.



Net billing mandates impose a form of obligation to serve.



Net billing creates additional transaction costs for both competitive metering and competitive billing services.

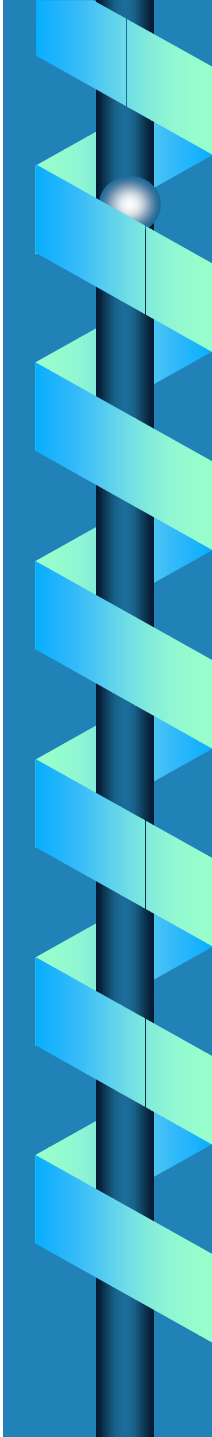


In an unbundled market, the need for two meters for net billing consumers will generally be unavoidable as long as wholesale delivery service rates contain a kWh component.



Net billing alternatives that minimize disruption of the competitive market:

- Direct subsidy payments to consumers.
- Tax credits to consumers.
- Renewable portfolio standard credits.



Another alternative: A federal net billing requirement, possibly coupled with a federal renewable portfolio standard.



Federal Restructuring Legislation

➤ Renewable Portfolio

- H. B. 4861 (Lazio)
- 3% of kWh by 2005
- 6% of kWh by 2010

➤ Net Billing